

## Recommended lab tests and related specimens for confirmation of selected vaccine-preventable diseases

Many VPD lab tests are available through MDCH Bureau of Laboratories for purposes of public health actions and follow-up. Contact MDCH Division of Immunization to discuss or arrange: 517-335-8159 (if unable to reach, contact MDCH Bureau of Laboratories, Division of Infectious Disease at 517-335-8067). More info is available in the [MDCH Lab Services Guide](#).

**Note:** VPD lab services indicated here are for diagnostic and public health-related activities. MDCH Bureau of Laboratories offers separate immune status testing on a fee-for-service basis for health care workers and medical/nursing students; call 517-241-5583 for more information.

Disease	Recommended Test(s)	Specimen(s)	Timing for specimen collection	Comments	Testing logistics & considerations
Diphtheria	Culture and PCR (through CDC only)	Nose or throat swab, diphtheritic membrane	ASAP	Biotyping and Toxigenicity testing (Elek test) should be done on isolates	Specimens should be sent to MDCH, to be forwarded to CDC after consulting with CDC.
H. flu invasive disease	Culture;  In cases < 5 years (if possible, cases < 15 years), save and forward isolate to MDCH for serotyping.	Normally sterile sites: (CSF, blood, joint fluid, pleural effusion, pericardial effusion, peritoneal fluid, subcutaneous tissue fluid, placenta, and amniotic fluid)	Any time after symptoms.	Hib Antigen testing is an adjunct to culture; if positive <b>for CSF</b> , case is considered Probable. Not reliable for serum and urine, or other specimens.	MDCH lab does serotyping; may go to CDC in addition for validation.

Disease	Recommended Test(s)	Specimen(s)	Timing for specimen collection	Comments	Testing logistics & considerations
Measles	Serology: Measles IgM (or paired IgG)  Additional: Culture or PCR specimen	Serum.  Throat swab recommended; urine also (alternates: NP aspirate, heparinized blood).	At clinical presentation. If IgM neg. on serum collected <72 hours after rash onset, repeat IgM on serum collected >72 hours after rash onset. If doing paired IgG, collect convalescent sera 10-30 after acute.  Within 7 days of rash onset.	Also test for rubella IgM. Important to collect serum <u>and</u> viral swab specimen.	Can be done through MDCH (uses CDC direct capture EIA test, code 2820); commercial labs can also do using other EIA methodologies  PCR and/or culture usually done at CDC. Measles viral isolates cultured elsewhere should be sent to CDC for further characterization.
Mumps	Serology: Mumps IgM or paired IgG, or both.  Additional: Culture or PCR specimen	Serum  Swab of buccal mucosa near parotid salivary gland duct (opposite upper molars) or duct of other affected salivary gland (i.e. near swelling). Massage affected area (e.g., Exterior cheek) for 30 seconds before swabbing.	At time of clinical diagnosis. If doing paired IgG, convalescent 2 weeks after acute.  ASAP after parotitis onset, up to 9 days after.	IgM in previously vaccinated persons may be absent, delayed, or transient, so if negative recommend repeat IgM on convalescent serum <u>and</u> pairing it with acute for paired mumps IgG assay.  (IgM may be negative in up to 50-60% of acute serum samples among patients who have been previously immunized, so a case in a vaccinated person should not be ruled out on the basis of a negative IgM)	MDCH sends mumps IgM out to CDC. Mumps IgM tests are available commercially but none are FDA approved. MDCH can do paired IgG (test code 2610)  MDCH does mumps PCR testing (as of 12/2006); test code 2983

Disease	Recommended Test(s)	Specimen(s)	Timing for specimen collection	Comments	Testing logistics & considerations
Pertussis	Culture, PCR	Posterior nasopharyngeal swab ( <b>not throat</b> ) or aspirate	Within 2 weeks of cough onset.	Use Dacron or calcium alginate ( <b>not cotton</b> ) swabs for culture; use Dacron for PCR ( <b>do not use cotton or calcium alginate for PCR</b> ).	Pertussis culture and PCR tests are available commercially. MDCH does also for public health-related case finding, outbreak investigation (code 0750)
Rubella	Serology Rubella IgM (or paired IgG)  Additional: Culture specimen	Serum.  Throat swab recommended (alternates: urine, CSF, blood, nasal specimens).	At clinical presentation. If IgM is negative on serum collected < 5 days after rash onset, repeat IgM on a serum obtained ≥ 5 days after rash onset. Consider paired IgG testing; convalescent serum 2-3 weeks after acute.  Within 2 weeks of rash onset	Also test for measles IgM  Important to collect serum <u>and</u> viral swab specimen. .	Can be done at MDCH (test code 2830); commercial labs can also do.  PCR and/or culture usually done at CDC. Rubella viral isolates cultured elsewhere should be sent to CDC for further study.
Tetanus	None	None	Not applicable	Diagnosis is clinical	
Varicella	DFA  PCR	Swab or scraping from base of fresh vesicle  Vesicular fluid by swabbing base of vesicle; lesion crusts.	2-3 days after rash onset	Lab confirmation indicated for severe or unusual cases (lab confirmation not needed for uncomplicated cases at this time).	Testing available commercially; and MDCH offers a DFA test.